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HEADSTART OPERATIONAL FIELD ANALYSIS. PROGRESS REPORT III.

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FROM JANUARY 1, 1966 TO APRIL 15, 1966 THE HEADSTART OPERATIONAL FIELD ANALYSIS IN CLEVELAND, OHIO PERFORMED 5 STUDIES. (1) SAMPLES OF HEADSTART (HS) AND NON-HEADSTART (NHS) CHILDREN WERE COMPARED AFTER 6 MONTHS OF KINDERGARTEN. FOUR OBSERVATIONS WERE MADE, USING 2 TEACHER RATINGS AND 2 OBSERVER RATINGS. THERE WERE 191 CHILDREN AT THE TIME OF THE LAST RATING. A REDUCTION IN SIGNIFICANT DIFFERENCES BETWEEN THE SAMPLES OCCURRED. (TABLES WITH RESULTS OF THE 4 RATING PERIODS ARE SHOWN.) (2) THE RELATIONSHIP BETWEEN HS AND NHS TEACHERS AND CHILDREN'S CONCEPT ATTAINMENT WAS STUDIED. THE SAMPLES WERE DIVIDED INTO 25 CLASSROOMS, OF WHICH 12 OF THEM WERE TAUGHT BY A HS TEACHER. THE POSSIBLE VARIABLES INCLUDED STIMULATION EVENTS, TOOLS OF LEARNING, AND TEACHER DIFFERENCES. THERE WERE SOME SIGNIFICANT VARIABLES IN FAVOR OF THE NHS TEACHERS' CLASSROOMS. (3) THE RESULTS OF THE ANALYSES OF THE RELATIONSHIP BETWEEN SEX AND CONCEPT ATTAINMENT INDICATED THAT BOYS ARE MORE EFFECTIVE IN VISUAL DISCRIMINATION AND THAT GIRLS ARE MORE EFFECTIVE IN HANDLING PERFORMANCE DEMANDS. (4) EXAMINATION OF THE CONCEPT ATTAINMENT OF THE TOTAL SAMPLE THROUGH THE 4 PERIODS OF MEASUREMENT INCLUDES 6 CHARTS REPRESENTING THE STEPS TAKEN BY THE EXTENSIVE SAMPLE. THE STEPS TAKEN INCLUDED COLOR CONCEPT, FORM-SPACE CONCEPT USAGE, GROUPING, ORDERING, TIME SEQUENCE, AND TIME DURATION. (5) FOUR CASE STUDIES, 2 HS AND 2 NHS, WERE MADE TO PRESENT A CONTRAST OF PATTERNS OF DEVELOPMENT. (CO)

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Headstart Operational Field Analysis*

PROGRESS REPORT III

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This report will cover the following activities during the period from January 1, 1966 to April 15, 1966:

I. Comparison of the Headstart and NonHeadstart samples after six months of kindergarten.

II. Relationship between Headstart and NonHeadstart teacher variable and concept attainment.

III. Relationship between sex variable and concept attainment.

IV. A) Examination of Concept Attainment of the total sample (Headstart and NonHeadstart) through the four periods of measurement.

B) Intercorrelational matrix.

V. Some selected case studies discussing the interaction of concept attainment and interpersonal relations.

PS 000246

*This is the third progress report relating to Contract No. OEC-512, PR No. 353, Appropriation Code 470

I. Comparison of the Headstart and NonHeadstart samples after six months of kindergarten.

As has been previously discussed in other progress notes, the method of determining concept attainment has been to utilize a system of observation of children within the classroom setting. The ratings have come from two sources: 1) an interview with the teacher which is a recording of her observations of the children: and 2) the observer bases his judgment entirely on the behavior he has seen within the classroom. In this progress note, we have information about the children's behavior for the first six months of kindergarten. These are divided into four observations with a teacher (T) rating being made in October, 1965 and January, 1966 and an observer (O) rating being made in the November-December, 1965 period and again in February, 1966.

It is recognized that the bases of the observations and the orientation to rating may be quite different when T and O are compared. We anticipated that reliability would be increased through use of manual. The best source for a reliability check are the January and February ratings. It must be recognized that a period of approximately a month passed between these two ratings, and therefore, we would expect certain changes in the child's behavior.[1]

Inter-observer correlations comparing teacher rating (Jan.) and observer rating (Feb.) yield the following Pearson-product correlations: Color, .58; Form-Space, .49; Grouping, .56; Ordering, .66; Time

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[1]The median level of the third and the fourth ratings (Jan. & Feb.) for the total group remains the same in the color area (level 5); in the grouping area (level 5); in the ordering area (level 4); and in the time durational area (level 1). We do find a change in the form-space area from level 4 in January to level 5 in February and in the time sequence area from level 2 at January to level 3 at February.

TABLE ON EXTENSIVE SAMPLE at the

FOUR RATING PERIODS

T_1 Rating Period:	TOTALS
Total No. of HS children	101
Total No. of NHS children	98
Total No. of children in HS_t classes	106
Total No. of children in NHS_t classes	93
Total No. of HS children in NHS_t classes	41
Total No. of NHS children in NHS_t classes	52
Total No. of HS children in HS_t classes	44
Total No. of NHS children in HS_t classes	62
Total Male	120
Total Female	79

T_2 Rating Period:	
Total No. of HS children	101
Total No. of NHS children	98
Total No. of children in HS_t classes	106
Total No. of children in NHS_t classes	93
Total No. of HS children in NHS_t classes	41
Total No. of NHS children in NHS_t classes	52
Total No. of HS children in HS_t classes	44
Total No. of NHS children in HS_t classes	62
Total Male	120
Total Female	79

T_3 Rating Period:	
Total No. of HS children	98
Total No. of NHS children	95
Total No. of children in HS_t classes	103
Total No. of children in NHS_t classes	90
Total No. of HS children in NHS_t classes	38
Total No. of NHS children in NHS_t classes	52
Total No. of HS children in HS_t classes	42
Total No. of NHS children in HS_t classes	61
Total Male	115
Total Female	78

T_4 Rating Period:	TOTALS
Total No. of HS children	97
Total No. of NHS children	94
Total No. of children in HS_t classes	102
Total No. of children in NHS_t classes	89
Total No. of HS children in NHS_t classes	38
Total No. of NHS children in NHS_t classes	51
Total No. of HS children in HS_t classes	41
Total No. of NHS children in HS_t classes	61
Total Male	114
Total Female	77

TABLE I

Summary of comparisons between HS and NHS children at completion of 2 months of kindergarten.
(T_1)

Concept	p[a]	Median Level HS	Median Level NHS	Median Level Combined	Modal Level HS	Modal Level NHS	Number of children at midpoint of scale and beyond[b] HS	Number of children at midpoint of scale and beyond[b] NHS
Color	.001	7[c]	5	6	7	7	68/99	50/90
Form Space	.02	4[c]	3	4	5	3	62/98	38/90
Grouping	.20	4	4	4	3	3	46/96	35/90
Ordering	.01	4[c]	2	3	4	1	30/92	13/87
Time Sequence	.01	4[c]	2	4	2	2	33/97	16/89
Time Duration	.05	1[c]	1	1	1	1	18/94	5/85

[a] A X^2 analysis was used to compare the frequency distributions of level occurrences

[b] The first number is the number of occurrences and the second, the total N rated on that scale

[c] Indicates that distribution which represented higher scores

Sequence, .48; Time Duration, .73. The lowest correlations were found in Form-Space and Time Sequence dimensions which showed the median level change from January to February.

As was reported in Progress Note II (dated January 1, 1966), there were clearly significant differences between the level of functioning of the HS group over the NHS group in most of the concept areas. Table I shows the completed ratings on all of the subjects which substantiates the previous results based on partial data. The total data more clearly demonstrates the higher performance of HS youngsters in that all comparisons except for grouping reached the established significance level of at least .05.

Table II indicates the differences between the performance of the HS and NHS children after approximately four months of kindergarten. We find significant differences in the color, ordering, time sequence, and time duration concepts. For example, looking at the median level of the HS group in the time sequence concept, we find that these children are able to compare their speed or slowness verbally with other children. They have the idea of knowing they have finished something or that they may be doing something faster than someone else. The median level of the NHS children while not at the level of comparison of the performance of their activity shows that they can tell a story which involves a series of events. The implication of such different levels of performance would suggest that the HS child is more cognizant of the children around him. There is the utilization of an external referent suggesting that they have been able to go more beyond themselves that the NHS. The evidence still reflects more overall success for the HS group.

TABLE II

Summary of comparisons between HS and NHS children at completion of 4 months of kindergarten.
(T_2)

Concept	p[a]	Median Level HS	Median Level NHS	Median Level Combined	Modal Level HS	Modal Level NHS	Number of children at midpoint of scale and beyond[b] HS	Number of children at midpoint of scale and beyond[b] NHS
Color	.02	7[c]	7	7	7/8	7	79/98	57/83
Form Space	.50	5	4	4	5	5	75/98	57/83
Grouping	.20	5	5	5	3/5	5	53/97	48/83
Ordering	.001	4[c]	4	4	4	4	39/92	20/80
Time Sequence	.02	4[c]	3	4	2	2	44/97	23/84
Time Duration	.05	1[c]	1	1	1	1	28/81	16/71

[a] A x^2 analysis was used to compare the frequency distributions of level occurrences

[b] The first number is the number of occurrences and the second, the total N rated on that scale

[c] Indicates that distribution which represented higher scores

Table III describes the performance of this group of children after about five months of kindergarten. We find the HS child tending to be more effective in all areas; however, there are significant differences in favor of the HS child in ordering, time sequence, and time duration. Although there is no significant difference at the better than the .05 level in the form-space area, we see that the HS child shows a modal level indicating his ability to delimit space. He is able to make drawings that show appropriate proportions and/or draws borders to delimit the space he wants to use. The modal NHS child is using whatever available space there may be, and he is making representations that could be recognized as bodies using mainly stick figures. This particular difference has been noticed from the third month of kindergarten on, and as the description of the after six months of kindergarten will indicate, continues even to that point.

As we examine Table IV which reports comparisons between the HS and NHS children after six months of kindergarten, we find that there is only a significant difference, i.e., in attainment of the grouping concept. On no previous occasion did the grouping concept discriminate the HS from the NHS. The HS performs at the higher level. We find still that in the form-space and the time sequence area that the median level of the HS child is one higher than the NHS child, but these distributions do not reach significance. Another interesting finding is that in the color concept, there is a bi-modal distribution with one group of HS children clustering around the ability to choose a variety of color for their work and the other group having reached the ability to choose realistic colors for a drawing. The NHS child has his modal functioning at choosing a variety of colors.

TABLE III

Summary of comparisons between HS and NHS children at completion of 5 months of kindergarten.
(T_3)

Concept	p[a]	Median Level HS	Median Level NHS	Median Level Combined	Modal Level HS	Modal Level NHS	Number of children at midpoint of scale and beyond[b] HS	Number of children at midpoint of scale and beyond[b] NHS
Color	.20	5	5	5	4/8	4/5	62/97	51/90
Form Space	.10	5	4	4	5	3	69/93	52/88
Grouping	.20	5	5	5	5	5	64/97	56/92
Ordering	.05	4[c]	2	4	4	4	28/85	15/74
Time Sequence	.01	3[c]	2	2	2	2	32/92	11/91
Time Duration	.02	1[c]	1	1	1	1	22/84	11/78

[a] A x^2 analysis was used to compare the frequency distributions of level occurrences

[b] The first number is the number of occurrences and the second, the total N rated on that scale

[c] Indicates that distribution which represented higher scores

TABLE IV

Summary of comparisons between HS and NHS children at completion of 6 months of kindergarten.
(T_4)

Concept	p[a]	Medium Level HS	Medium Level NHS	Medium Level Combined	Modal Level HS	Modal Level NHS	Number of children at midpoint of scale and beyond[b] HS	Number of children at midpoint of scale and beyond[b] NHS
Color	.20	5	5	5	5/8	5	61/83	62/83
Form Space	.20	5	4	5	5	4/5	68/86	57/83
Grouping	.01	5[c]	5	5	6/5	5	66/87	52/88
Ordering	.50	4	4	4	4	4	27/74	20/68
Time Sequence	.30	3	2	3	2	2	26/89	15/85
Time Duration	.30	1	1	1	1	1	8/70	8/70

[a] A X^2 analysis was used to compare the frequency distributions of level occurrences

[b] The first number is the number of occurrences and the second, the total N rated on that scale

[c] Indicates that distribution which represented higher scores

Why the reduction in significant differences; and, particularly, why does the grouping variable reach significance in differentiating the groups? Stimulation events, particularly brief ones, usually have not been sustained as has been reported in follow-up studies. However, we are still recognizing some differences, especially the significant one in grouping. Are there any explanations for this result? Bruner speaks of the tools of learning. Let us consider color and form as more related to the tools of learning for the kindergartener. We might assume that the HS children were exposed to more and intensive handling of color and form activity. The dramatic difference at T_1 on Color certainly supports this thesis. Now, all the children have had considerable exposure to such materials within the kindergarten experience. Thus, we may assume all the children (HS & NHS) have achieved a greater similarity in their effectiveness in the use of the tools (color & form activity) of education, as we may have measured them. It may be that the HS child is able to apply some of these tools reflected in the use of color and form to the behavior which is related to the grouping concept. They have become adapted to the demands and also the tools of school. Now they continue to show their more effective use of these tools. For example, there is a very good representative group of the HS children who are able to differentiate gropps of objects or events by contrasting characteristics. They can group on the basis of boys vs. girls or right vs. left; whereas the NHS child is still only able to group things with an understanding of the object and how it fits into the setting, i.e., contextual grouping. The modal NHS is able to place wheels on the car he is drawing or he is able to set dishes on the table. There is an understanding of the objects that are relevant

to the situation in which he is active.

The study of other variables offers some refinements to these reflections.

II. Relationship between Headstart and NonHeadstart teacher variable and concept attainment.

We wondered whether children would show different kinds of responses relevant to teacher experience with Headstart. Our samples divided themselves into 25 classrooms of which 12 were being taught by a teacher who worked in the Head Start Program and 13 by a teacher who did not work in such a program. We are not examining any of the factors that may have been relevant in the choosing of the teachers. To our knowledge, availability and interest in the Headstart Program were the major factors.

Table V presents the results of the data on the extensive sample. The statistical process is the same one referred to previously, i.e. are the distributions on the various concept scales significaltly different from one another as calculated under a chi square measuring distribution differences. During T_1 (the teacher ratings in Oct.), there is a significant difference in just one concept area, i.e., color. Whether HS or NHS, the children in the NHS teachers' classes were doing significantly better in the color concept attainment than the children in the HS teachers' classes.

During T_2 (Nov.-Dec. observer rating), there were significant differences in the concept areas of color and ordering. Again the

TABLE V

Summary of comparisons between HS and NHS teacher during the first 6 months of kindergarten (combined sample).

	Concept	p[a]	Modal Levels HS$_T$	Modal Levels NHS$_T$	Number of children at midpoint of scale and beyond[b] HS$_T$	Number of children at midpoint of scale and beyond[b] NHS$_T$
T_1 (2 months)	Color	.02	7	7[c]	63/90	71/98
	Form-Space	.20	2/3	5	42/90	58/97
	Grouping	.30	3	3/5	31/89	50/96
	Ordering	.50	1	4	25/85	18/93
	Time Sequence	.20	2	2	23/90	26/95
	Time Duration	.10	1	1	7/83	16/95
T_2 (4 months)	Color	.01	7	7	68/91	83/89
	Form-Space	.70	5	5	69/91	68/89
	Grouping	.70	4	2	32/91	34/88
	Ordering	.01	4	4[c]	23/82	37/89
	Time Sequence	.70	2	2	30/92	37/88
	Time Duration	.20	1	1	20/67	25/84
T_3 (5 months)	Color	.02	4	4/7[c]	52/94	61/92
	Form-Space	.70	6	5	61/93	60/87
	Grouping	.50	5	5	56/95	57/93
	Ordering	.01	4	4[c]	22/74	21/84
	Time Sequence	.50	2	2	21/92	22/90
	Time Duration	.20	1	1	14/74	19/77
T_4 (6 months)	Color	.80	5	5	67/87	57/78
	Form-Space	NS	5	4/5	61/82	64/86
	Grouping	.01	5[c]	5	62/96	56/86
	Ordering	.01	7	4[c]	21/67	26/74
	Time Sequence	.80	2	2	25/89	16/84
	Time Duration	.80	1	1	8/96	9/103

[a] A X^2 analysis was used to compare the frequency distributions of level occurrences

[b] The first number is the number of occurrences and the second, the total N rated on that scale

[c] Indicates that distribution which represented higher scores

children who were in the NHS teachers' classes were performing at a higher level.

At T_3 (Jan. teacher rating), there was a significant difference in the ordering concept. This again was in the NHS teacher classrooms.

At T_4 (Feb. observer rating), there are again two significant differences, viz., one in ordering and one in grouping. In the grouping variable, we have the first instance where the higher attainment of the group was in the HS teachers' classrooms. The ordering again was seen as higher in the NHS teachers' classes.

Why are there any significant differences related to this teacher variable? Why when there are these significant differences have they mainly been in the favor of the NHS teachers' classrooms? Our initial efforts to further understand this was to examine an interaction variable between teacher and student. The question was: How do the HS children who have the two kinds of teachers compare with one another; and the counterpart of that is: How do the NHS children compare to each other when they have different kinds of teachers?

We compared the performance of the HS children in the HS teachers' classes with the HS children in the NHS teachers' classes. Utilizing the same system of analysis, we find that at T_1 the HS child does significantly better with the NHS teacher in the color concept. At T_2 there are no significant differences between the HS children with Head-start teachers and those HS with NHS teachers. At T_3 the HS child was doing better with the NHS teacher in both color and grouping. And there were no significant differences during T_4.

To complete the picture we find that at T_1 the NHS child does better in grouping with NHS teachers as compared with the NHS child in the HS teachers' classes. At T_2 the NHS child does significantly better with the NHS teacher in the area of time sequence. At T_3 the NHS child does better with the HS teacher in grouping and with the NHS teacher in time sequence. There were not any significant differences found at the T_4.

Two possibilities suggested by this bit of refinement are: the NHS teacher may be rating her children higher than the HS teacher or there is some special kind of interaction going on between the NHS teachers and the children that may be offering the children some extra impetus to increase the level of achievement.

It should be recalled that there were many more significant differences in the T_1, T_2, and T_3 ratings when we were just comparing the HS and NHS youngsters than the number of significant differences referred to in the disucssion about the teacher variable.

We took it one further step comparing the attainment of like children, i.e., HS children with other HS children, within the NHS teacher groups and the HS teacher groups. We found that there was only one significant difference in all four time periods, differentiating the HS and the NHS children who have HS teachers. Only at T_2 do the HS children do better in the area of time duration. To contrast this we found that the HS child did significantly better than the NHS child in the NHS teacher classrooms to the following extent: T_1 in color, form-space, ordering and time sequence; T_2 in color and time sequence; T_3 in color, grouping, ordering, time sequence, and time duration; and T_4 in form-space.

Again we must raise the question of differences based on differential handling of the rating scales. For the next progress report, we will compare an inter-rater reliability of observer and HS teacher as contrasted with the observer and HS teacher. We may get some indication here as to whether either kind of teacher may be contributing more to the inconsistency between the observer and the teacher ratings. Further we will examine the mean rating levels of the two groups of teachers.

However, if we take these particular results at face value, then we have the very strong suggestion that the significant difference between the HS and NHS children is predominately contributed to by the differences seen within the NHS teachers' classrooms. There is not reason to believe that these differences are not only the result of the NHS teacher rating either her children higher or particularly the HS children in her own class since higher ratings are not consistently assigned in all areas at all times. Further, that the significant differences found based on the observer's ratings were also found essentially (there was only one deviant from this) in the NHS teachers' classrooms. The observers' ratings are based exclusively on what he observes and records in the classroom.

At this point, no further generalizations will be made concerning this particular aspect of the study.

III. Relationship between sex variable and concept attainment.

Using the same chi square analysis, we found that there were no differences at T_1; the males were significantly higher than the females in grouping at T_2; the males were significantly higher than the females in time duration at T_3; and at T_4 the females were significantly higher than the males in color, form-space, and grouping, while the males were significantly higher than the females in time sequence. These results are based on combined samples disregarding the HS/NHS variable.

The thoughts that these particular results raise at this point are two-fold. Firstly, there is the consideration that, structurally, boys may tend to be more effective in visual discrimination in the use of forms. This is somewhat substantiated by the studies suggesting that boys are better in mathematics and also the possibility has support in Herman Witkins' work comparing male and female on whether visual or body sensation cuing is used in perception, with the males tending to use the visual cuing to get things upright and seeming to be more effective in visual perception tasks.

The other suggestion from this data would support the opinion that the girls learn to handle the performance demand within the classroom more effectively than the boys. In part, our measures of concept attainment is likely reflecting adaptation to classroom demands.

At this point, we have a bit more information about the sex variable relevant to HS/NHS variable. We find at both T_2 and T_4 (the observer ratings) that the HS girls do significantly better than the HS boys in the area of color. However, in the T_1 and T_3 ratings (the

teacher ratings) that there are no significant differences including the areas of color. With the NHS children we find that girls do significantly better than boys at T_1 in the form-space area. There were no other significant differences shown when the NHS children were compared considering the sex variable.

It is very hard to say as far as this finer break into the NHS and HS groups whether these differences were artifacts or may have some particular meaning. We are quite interested in examining the whole male-female factors more carefully. We have not considered, for example, whether there may be an age factor that may be affecting these differences. Another question around age has to do with seeing whether it is the older or the younger child who is contributing more to the differences in all areas of our work.

IV. A) Examiniation of Concept Attainment of the total sample (HS & NHS) through the four periods of measurement.

At this time, we are continuing our close examination of the extensive sample to determine how these concepts unfold in the kindergarten experience. The data for the intensive group of 50 is being coded to help us get a clearer idea of how the children reveal the steps in achieving the various concepts. As this data will be further examined, we will compare the a priori levels that were established at the beginning of the study with the empirical data on the intensive children.

The next six charts (Charts I - VI) represent the steps taken by the extensive sample as indicated through our four ratings.

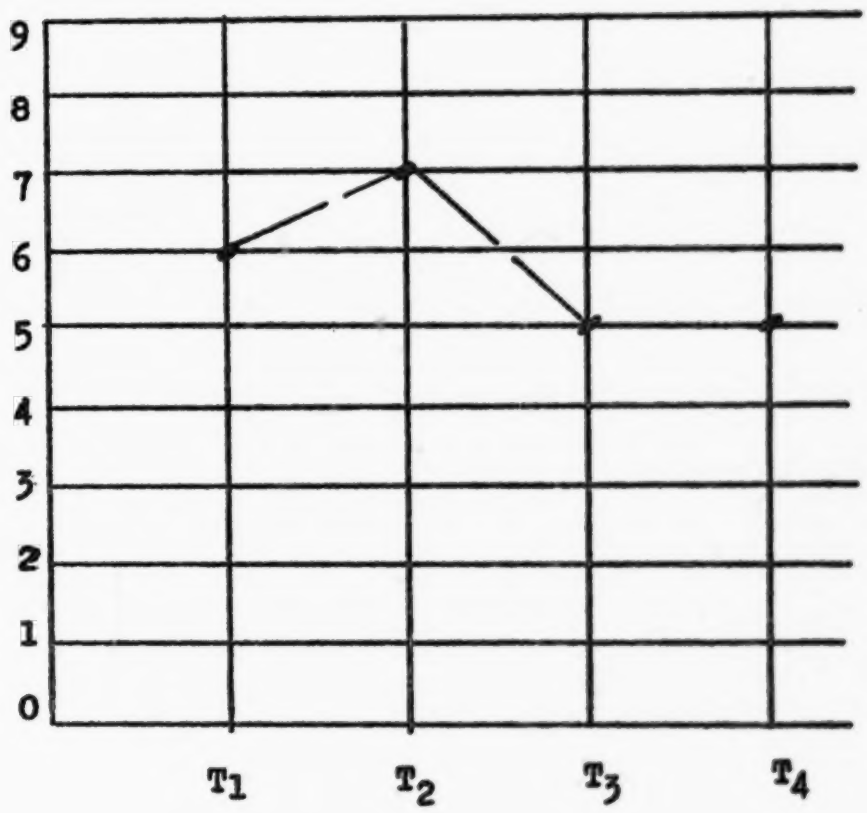
Each of the points on the chart represent the median level of the entire group. It must be emphasized again that these ratings represent two ratings made by the teachers who were interviewed by the observers, and two of the ratings were made independently by the observers based on just what they saw. It would be useful to the reader to again examine Tables I-IV which show in addition to the median level for each of the concept areas the mode as well as the ~~percentage~~ proportion of the children who achieved the ~~mode~~ midpoint or better at the different points in time.

Chart I represents the development of the color concept and immediately raises question about our a priori levels as well as the whole precess of accurately coding observed data. At this time, we are not sure whether the two initial median levels which are higher than the third and fourth represent incorrect sequence, the unreliability in applying our instruments measuring color concept, or as a group more children were involved with color activity and thus there was more opportunity to get such information. There were some clarifications during the year regarding the application of the instruments in our work.with the observers themselves and in their (the observer's) interviews with the teachers. Such a peculiarity also occurred in the time sequence variable. Certainly, we must examine this problem in a future exploration. The empirical data from the extensive sample will be most helpful in this regard.

Whatever was operating to result in a level 6 as the first rating and 7 level as the second rating and then levels 5 for both the third and fourth rating, we feel that the information that both

CHART I

Level of attainment of color concept as reflected by median score of combined samples (HS and NHS).



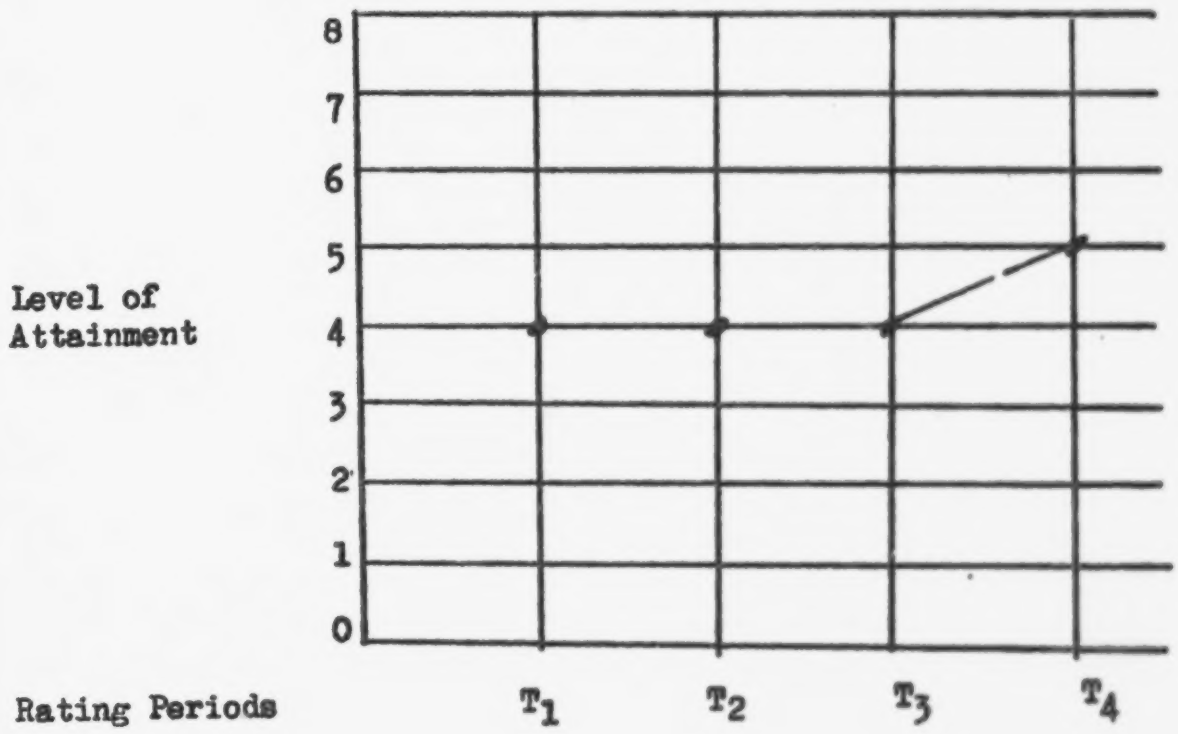
the observers and teachers had of the children by the time January and February rolled around was probably a more accurate indication of how the child was functioning in a school setting. Therefore, we have a tentative representative level of functioning of this group of children at the 5 level which according to our manual indicates that the child can handle a variety of colors in his work. This would mean that the child does not necessarily choose the appropriate color but would use different colors to represent different portions of his drawing.

One point that should be made here is relevant to the application of this information if it is accurate. There usually is a considerable emphasis in the classroom to choose the appropriate color for the color of a given object. For example, if it is Halloween time, then the repetitious use of orange for the pumpkin is rather frequent. If the children are mainly interested in using color to delineate different portions of the drawing rather than thinking of appropriate usage, we may be interfering with the process of expression and the excitement of being productive. ~~Becoming~~ Considering either our kindergartners or Head Start classes, we should examine the use of color. Is free choice more desirable than emphasis on the appropriate color in drawings or paintings?

Chart II is a representation of the form-space concept usage. Here we see that the children are functioning at the median level 4 for the first three ratings and at level 5 for the rating that was made after about six months of kindergarten. Level 4 represents the rather free use of all the space available either by drawing or by using blocks or whatever situation the child may be in. Here the child will use mainly stick figures and it is rather difficult to differentiate

CHART II

Level of attainment of form-space concept as reflected by median score of combined samples (HS and NHS).



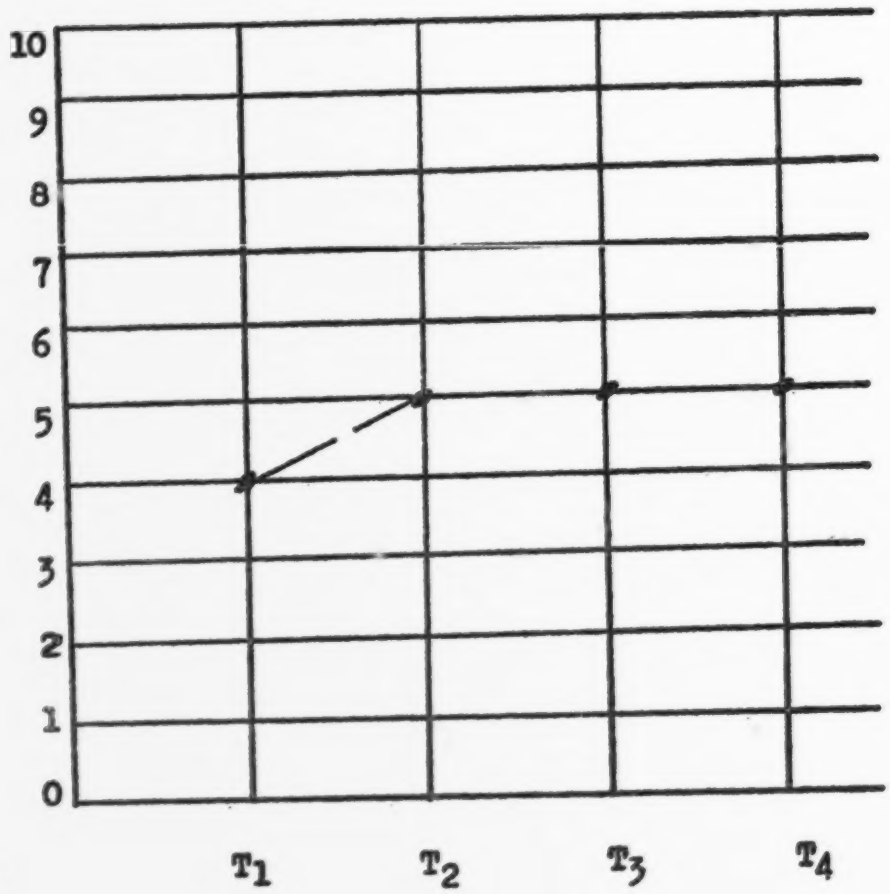
amongst his figures. Level 5 which appears to be the median level of the group at T_4 represents more of a delimitation of space where at times the child will frame in his work and there is an indication of proportionality in the form-space concept. This result may demonstrate the child's tendency to separate himself from his environment. He has a clearer view of himself as a separate entity.

Chart III presents the area of grouping, and we see here that the group moves rather quickly from level 4, the initial rating, and remains at level 5 for the next three ratings. Level 4 is the intentional pairing of words and the related objects, e.g., the child's name and his coat, to the point where he can make logical groupings considering the context of the situation. In this conceptual event, the child recognizes the background and selects the appropriate objects or comments that would fit into the background, e.g., the drawing of a car and placing the wheels at the bottom. It might be restated here that it is in the grouping area that the HS do significantly better than the NHS at T_4. The HS children apparently have a more frequently understood grouping based on the contrast or difference whereas the median level of NHS is lower.

The next area is that of ordering. Here we see that the median level moves from a beginning at level 3 to a plateau at level 4 at T_3, T_3, and T_4. In other words, the median shows that they were able to rank order on the basis of a self styled dimension at the beginning of kindergarten. In actual behavior, they were able to arrange blocks from smaller to larger or to make drawings of varying size and be able to demonstrate the understanding of the increase of size in their work. They moved from this particular point to the level

CHART III

Level of attainment of grouping concept as reflected by median score of combined samples (HS and NHS).



where they could recognize numbers as representative of an increase in quantity, up to five. In other words, if you would ask the child to give you two crayons, they were able to accomplish this task. We again may see the relevance of considering the level of this functioning in the teaching experience. What should be done to increase the personal understanding and progress within the classroom? Should there be an emphasis on counting, or as may be suggested here and in grouping, more focus on the sense of grouping just a few objects. The actual counting may just be an adult demand rather than an enabler of learning at this point in the child's education.

Time sequence is presented in Chart V. Again we have higher level median scores of the first two observations than we have at the third and fourth. However, the modes were consistantly at level 2. At this point, I would assume that the median level of the group is best represented by level 3. This suggests that the child is able to tell a sequential story giving the sequence of events in their appropriate time order. These stories or descriptions could be an established story that the child has become particularly interested in, or a description of some happening in his life which involves a time sequence.

The time duration (Chart VI) indicates that the children have only the barest awareness of the passage of time as would be suggested by level 1, e.g., the moving around suggesting discomfort when the child feels he will not complete his work on time.

We are anxious to compare these results based on our a priori levels with the empicical data of the intensive group. More information about the unfolding process will be discussed in the next progress note.

CHART IV

Level of attainment of ordering concept as reflected by median score of combined samples (HS and NHD).

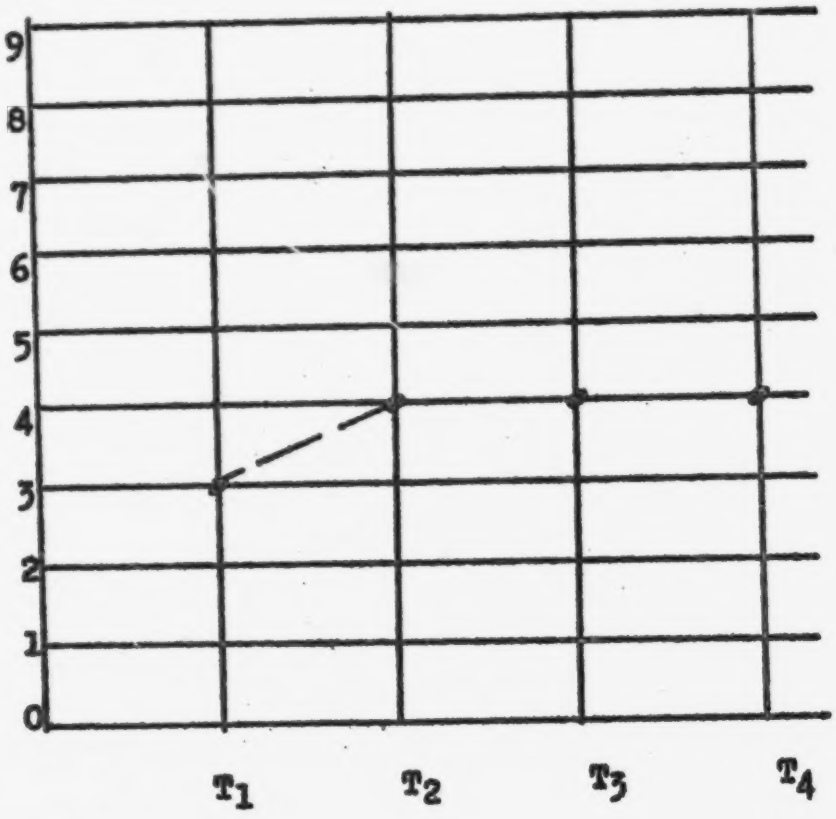


CHART V

Level of attainment of time sequence concept as reflected by median score of combined samples (HS and NHS).

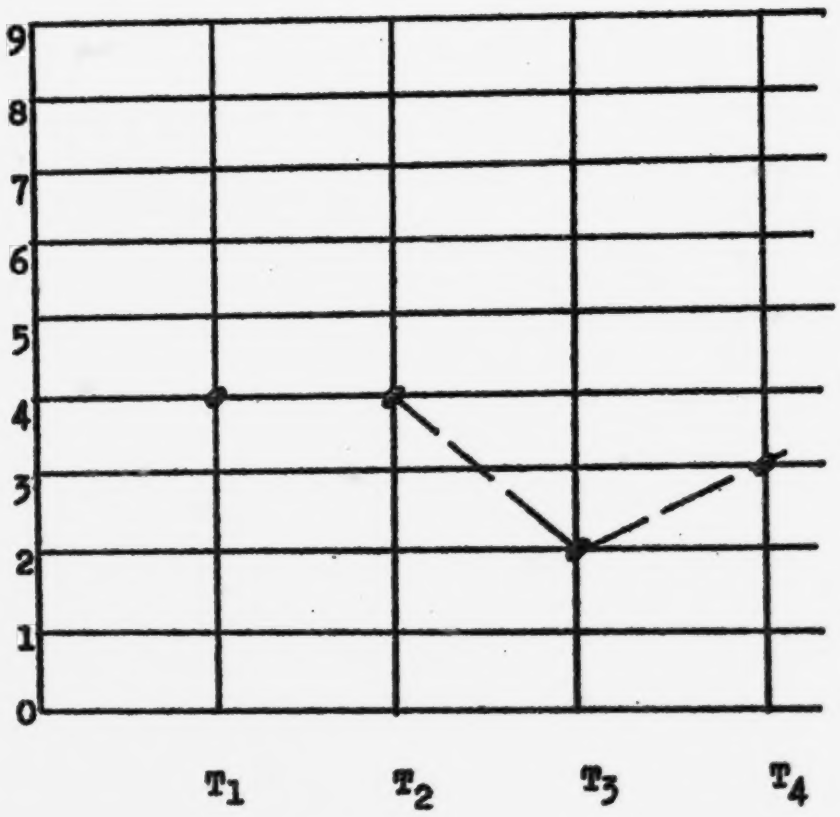
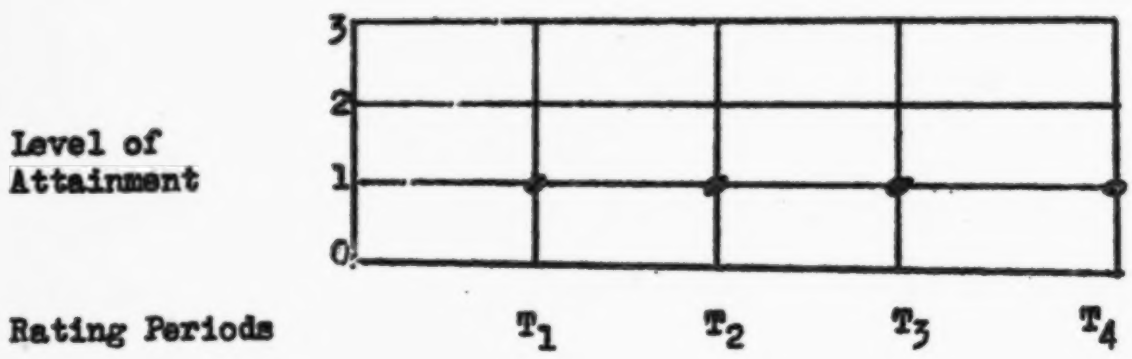


CHART VI

Level of attainment of time duration concept as reflected by median score of combined samples (NS and NHS).



IV. B) Intercorrelational examination of relationship amongst the six concept areas.

The level of Pearson product-moment correlations in Charts VII and VIII indicate definite relatedness of all measurements to one another at better than the .01 level of significance. The relationships on Chart VII are certainly of low enough level that we can assume we are measuring different, at least in part, functions.

Generally, there was an increase in the degree of relstionship at T_3 as shown in Chart VIII. Considering that the correlations still remain mainly within the .5 to .7 range, we can still accept the usefulness of each scale as a measure of different aspects of behavior.

Time duration shows the least association with the other variables save time sequence. The progress of the sample in most areas except for time duration is reflected in the lowered relations between this variable and the non-time variables.

The higher relationships amongst the ordering, grouping, and time sequence variables were anticipated. Why the color and grouping show the highest relationships at both points in time may only be happenstance. We will keep an eye on this as we have the other matrices completed.

Chart VII

Intercorrelational Matrix For Ratings On Combined Extensive Sample at T_1

	C	FS	G	O	TS	TD
C	——					
FS	.46	——				
G	.52	.59	——			
O	.61	.51	.58	——		
TS	.39	.44	.48	.51	——	
TD	.25	.40	.40	.44	.47	

Note: Correlations of .19 or larger are considered significant at less than the .01 level with samples of 175 to 200.
(From: Lindquist, E.F. A First Course in Statistics, New York: Haughton, Mifflin, Co., 1942, Table 21, p. 195

Chart VIII

Intercorrelational Matrix For Ratings On Combined Extensive Sample at T_3

	C	FS	G	O	TS	TD
[illegible]	—					
FS	.58	—				
C	.63	.66	—			
O	.70	.55	.69	—		
TS	.55	.52	.68	.65	—	
TD	.31	.37	.28	.27	.44	—

Note: Correlations of .19 or larger are considered significant at less than the .01 level with samples of 175 to 200.
(From: Lindquist, E.F. A First Course in Statistics, New York: Haughton, Mifflin, Co., 1942, Table 21, p. 195)

V. Some Selected Case Studies

In developing this project we felt that it would be important to get at a closer examination of the smaller group of children (the intensive sample of 50) to follow their concept achievement and some elements of interaction within the classroom. The following case studies represent our initial effort in: 1) trying to become more acquainted with the interaction between cognitive development and interpersonal adaptation, and 2) to possibly gain some leads regarding the styling of the programming and staffing of child development centers. We have tried to choose somewhat representative children as subjects for these case studies. It was felt that the four children here presented offered a good contrast of the patterns of development within this first six months of kindergarten according to our rating scales. Likewise, their levels of social development have varied to a significant extent. The four children presented were selected by one observer (Mrs. Sterioff) because of the obvious behavior contrasts between the HS and NHS children. A sample of four is not significant. However, the children are somewhat representative of the children within their particular economic local. The four come from two kindergarten classes within the same school district. The two HS children, Robin and Anita, are in one classroom. The two NHS children, Antoinette and Cindy, are in the other. Another factor which further strengthens the contrasting elements is the fact that these two classrooms have been labelled "pure" classes in our study for the purposes of follow-up. This simply means that the classes are composed entirely of HS and NHS children respectively. The four children had previously been selected as part of the intensive sample by

the random selection process explained in the first report. It is fortunate that the particular sample here is of the same sex.for it offers another control in making comparisons among the children. It does not provide an opportunity, however, to look at male performance within the same classroom. As our data suggest the girls on the whole do significantly better (are rated higher) by the T_4 rating period and it would be valuable to make this type of sex comparison. Likewise these sketches do not give a picture of the HS children in a NHS teacher classroom or vice versa. These types of case presentation will be added to later reports.

Robin - Head Start
Birthdate: 11-13-60

Robin, age six, is a tiny, bright-eyed child with an impish smile which she wears most of the time. Her clothes though clean are generally faded and unironed. Her collars stick up haphazardly and her buttons are often undone or her belt untied. She appears clean and scrubbed, however. Robin's bodily movements are quick and bouncy and she appears unable to sit or stand still for an extended period. Throughout the morning and regardless of the activity Robin can be seen tapping her feet, wiggling her tongue or waving her hands in the air. She rarely walks to a destination preferring to run or skip.

One of the most notable characteristics of Robin's behavior early in the year is her eagerness and enthusiasm for the activities within the classroom. She frequently volunteers conversation during Show and Tell and answers questions which the teacher directs to her with little hesitation (if not always correctly). She listens and watches attentively the teacher's instructions for art activities or other assignments and is frequently one of the first in line to get paper or other project materials. Her enthusiasm is apparent as she tells others about what she has just made. During rhythms she waves her hand vigorously to be recognized for a turn and hops up quickly to take her place. The teacher in early October gave her small responsibilities such as putting the crayons on the tables or giving out paper for drawing which she readily performed (although not always correctly).

This enthusiasm may in part be related to Robin's familiarity with the surrounding materials and environment of the classroom. Robin attended Head Start in this same classroom to which she now adapts so

readily. The benefits derived from a familiarity with the physical environment of the kindergarten certainly must play some role in reducing the crisis associated with the first few weeks of kindergarten. (Several of the teachers conducting the observed classes commented that among Head Start children they witnessed fewer of the behavioral regressions common during this period). One can only surmise that if these adjustment behaviors interfere or take up energy that could be devoted to learning, any preventive measure such as Head Start, would have a positive effect. It is this general familiarity with the surroundings that seems to allow Robin freedom from the beginning of the school year to go beyond simple investigatory behavior of the materials to use them as tools for creating and expressing simple ideas. For example, she spent little time fingering her crayons or exploring their use by scribbling but rather used them appropriately to draw a picture of a little girl. The behavior was recorded as follows in a free play period in October:

> Robin runs up to the T and asks if she can draw. She goes to get paper and crayons spontaneously and goes to a table. She first draws a rim around her paper with three blue sides and one green. She now makes a blue circle in the middle of the paper. She makes a triangular shaped body. On the top of the triangle she draws horizontal and vertical lines. The horizontal lines are blue and the vertical lines are black. This looks like a blouse or shirt. She now retraces these lines. She makes two blue eyes. She fills one in and leaves the other. She adds eyebrows, a round nose and a circular mouth which she fills in. These are all blue. She now adds two short arms. She now adds blue hair on top of the head with short uneven strokes. She now adds part of the arms below the elbow and puts four fingers on one hand.

The picture is not full of ellaborate details or ideas nor is it proportionally accurate. Robin, however, uses a variety of colors (although

they are not appropriate) and the figure contains all the essential parts of the body including eyebrows, fingers, and clothing (a plaid shirt). She later tells this story about the picture, "This is my sister. Her name is Donna." Another example of the constructive use of materials within the classroom centers around block construction. Early in the year she made small square structures which she called "houses" (as opposed to a random placing of the blocks with no intention or idea).

In addition to using the materials to represent simple ideas she frequently verbalises about her behavior as she engages in it. These verbalizations appear to be a natural extension of the same concrete ideas she is expressing with the materials as tools (as in the picture of her sister). Verbalization appears to be a type of 'tool' for measuring and categorising events, objects, etc. around her. Her comments may or may not involve other children. Typical examples of this verbal categorization behavior involving other children include the following: (1) One little boy asked, "What are you making?" Robin responded, "I'm making a tree and leaves". (2) Another child asked Robin, "What do you want to make?" as they took the blocks off the shelf. Robin responded "a house" and proceeded to make her conception of one. These responses illustrate clearly that Robin is aware of specific objects within her environment and seeks intentionally to represent them. Often her comments are in direct response to the objects themselves and do not involve other children. For example, as she played with the clock in the doll corner on day she said, "Where's the plug? How do you turn it on?" These questions were not asked with expectation of a reply because at that moment no one else was near. Rather Robin appeared to be using the verbal skills at her demand to compare the

clock with others she had previously encountered. She really seems to be saying "I have seen other clocks (or clock) that are plugged into the wall. This looks like a clock and therefore must be plugged in too."

Robin frequently has opportunity for more verbal verification within the more structured activities such as conversation periods directed by the teacher. Here the teacher becomes the questioner and may ask for example, "point to something green" or "what number am I pointing to?" etc. These questions are not just a checking devise for the teacher but provide another opportunity for participating and interested children to further test simple categorizations such as color and numbers, etc. In another respect the teacher has become a model for Robin as she imitates the teacher's method of asking questions. For example, the teacher regularly takes attendance and records those absent. She uses this time wisely to ask the children about numbers such as, "how many boys are absent today?" Robin soon began to anticipate the teacher and one looked around the group and commented "There are three boys absent today" before the teacher had asked the question. In this case Robin was wrong in her answer but eagerness to attempt an answer provided an opportunity for further clarification by the teacher of the number concepts.

- One other method which Robin uses to derive meaning and understanding of events and objects is 'pretend' play. This involves more than imitative behavior as is frequently seen in the doll corner. Rather Robin uses one object (such as play) to represent another. For example, as Robin rolled out the clay she said "I'm making food. I'm making pancakes. I'm making a sandwich". Here she used one material to represent another presently absent material (food).

Robin from early in the semester has made these simple categorizations of events, objects and behaviors as they happen on the basis of details which are significant to her. As pointed out, a familiarity with the materials and objects within the classroom seem an aid in stimulating this behavior. Another factor of importance is the familiarity with classroom procedures and routines as set down by the teacher (meeting the demands of the teacher). Robin has no difficulty meeting the teacher's instructional requirements revolving around procedure. Examples are plentiful: (1) the teacher has asked the children to draw their pictures first in chalk and then crayon over it. She has also asked them to make borders around the pictures.(2) There is a prescribed routine for milk disposal and clean-up. (3) There are suggested courtesies for being called on to speak or recite. Robin carries out each of these activities with little difficulty and remembers to complete the task before going on to something else. She seems quite concerned that the procedures be correctly followed and her concern increases as the semester goes on. By December Robin appears to be spending more time carrying out the procedures associated with various activities and the enthusiasm shown earlier in the semester appears somewhate lessened. This lag is particularly notable in art periods. Robin begins to have difficulty translating the teacher's requests or examples on to her own paper. She carries out the preliminaries enthusiastically (which many children now have by passed for alternative approaches of their own devise) but often poorly executes the main assignment (such as, make a lion or an elephant on your paper). Robin appears to have greater difficulty with those art assignments which the teacher illustrated two-dimensionally on the blackboard than those which were

illustrated three-dimensionally or those which she creates on her own. For example, at Christmas time they made a reindeer out of scraps of paper. The teacher illustrated by making one for the children first and Robin was able to see and touch it. She performed this task quite well in spite of the fact that her triangle was a bit out of proportion. Sigel in his article "Categorization Behavior in Lower and Middle Class Preschool Children" points out the differences between these two groups in dealing with representation of familiar objects. He shows that the lower class child does not derive the same meaning from an object presented in black and white or in color pictures as he does from the object itself. In other words, the lower class child derives more meaning from the object itself as Robin seems to do than from any representation of it (two dimensional color or black and white representation of that object). Robin does not seem to be able to translate the meaning from the blackboard representation onto her paper. She can interpret the paper as a representation of what the teacher requested if you ask her but copying the teacher's illustration is quite difficult for her. Her typical pattern of behavior is a laborious carrying out of the preliminary procedures followed by several impulsive attempts to make the suggested drawing, which usually ends in failure, followed by a refocusing on the procedures (going over the border she had made at the beginning). She frequently begins drawing a familiar design of triangles and squares on her paper, making it over and over. Robin, however, has continued to be persistent in her efforts which often leads to partial success (especially later in the semester) which the teacher then helps her complete.

Another illustration of the confusion centering around pictures and representational words becomes obvious when Robin plays the picture-matching

lotto game. The teacher has given clear instructions for the leader to say "Who has the picture that goes with .... (and offer a clear description of the picture as "with the man who is fishing in the river"). When Robin is given a turn her verbalizations are shortened and focus usually on a single aspect of the picture such as, "Who got man fishing". It appears that she has little understanding of words such as "picture", "that goes with or matches" or "in the river". As a result she matches pictures on the basis of a single element and frequently becomes confused as the matching requirements become more complex and subtle.

As this type of behavior became more apparent Robin's behavior in more academic subjects such as learning of numbers and alphabet also began to slow down. Although she is still well ahead of many children the pace has continued at a slower rate than earlier in the year. In conjunction with this we see Robin engaged in more imitative doll play activity; more aggressive behavior during rhythms and showing greater distractibility during more structured learning periods. Much of her enthusiasm seemed now to be redirected to social interactions and relations with her peers.

Robin's relationships with her peers has been cordial from the beginning. She will often stop her work and ask another child "what are you making?" or "what's that?". On one occasion early in the year one child asked Robin, "How do you make a broom?" Robin immediately responded "like a stick" and she picked up a crayon and drew a long line for the child. She makes frequent comments to the other children such as "everyday I sit by you" or "three people are sitting at our table today". She shows early in the year this awareness of her social environment and the people immediately around her. Intially also she is able to engage in cooperative

games with only the slightest confusion and on several occasions took charge of the lotto game.

This cooperation and social awareness of other children increases throughout the months of November and December and the verbal interactions increase. Conversations though brief reveal Robin's continued and increasing awareness of those around her. In December we see for example, that she reminds other children that they must share their crayons because there are not enough boxes at the table. Most of her block and doll corner games involve two or three of her immediate friends in role playing situations such as "I am mother, you are father", etc. Many times the children engage in more academic games such as counting the buttons on the snowmen or counting the form board pieces or naming their colors. She enjoys seeing the other children participate in activities and frequently comments to them as she watches them. She has become increasingly aware that various children within the group perform poorly while others do well and more easily gain the approval of the teacher. By December when she begins to have difficulty performing the art assignments she frequently will ask one of these more adept children to draw her picture for her. They always comply.

By January there are clear groupings of children within the classroom and Robin seems to be on the periphery of the group with the highest performing ability and those given highest approval by the teacher. This group is made up of about six girls and Robin will often choose one of these girls for partners or sit next to them during work periods (although they less frequently choose her). Likewise, she is usually selected as one of this group to perform special tasks for the teacher (except for art projects).

Robin's relationship with the teacher has been warm and friendly

Cindy - Non Head Start
Birthdate: 8-10-60

Cindy is a shy, non-verbal child whose usual school attire is dirty, unironed dresses which appear about two sizes too large. She gives the general impression of a child suspicious and distrustful of the new school environment with a resulting unwillingness and reluctance to participate or become involved in classroom activities. She wears a rather quizzical, doubtful look on her face most of the time especially in her infrequent interactions with teacher and peers, and early in the semester she rarely smiled or showed any emotion. From the beginning of the year Cindy appeared tense and uncomfortable during the class periods. This frequently resulted in attempts to remain obscure and anonymous. For example, she frequently sat quietly at the outer back edge of the group circle, or moved passively en masse with a group of children so that it was difficult for the teacher (and observer) to see exactly where she was or what she was doing. Her entrance into the classroom followed a similar pattern. She seemed to 'sneak' in the door and slide closely and inconspicously along the wall until she reached the cloak room (as if hiding from someone). Her shoulders were most often in a tightened unnatural position and she displayed many nervous mannerisms, especially related to verbal participation. These behaviors include sucking her fingers or clothing, picking her nose or fingers, pulling her socks, playing with items of clothing (such as twisting on her collars, adjusting her belts, etc.) in most stressful situations. This type of behavior increases immediately before (if she anticipates being called on) or after the teacher has called on her to recite (especially if

she misses) or if she becomes distracted or bored with the immediate activity. During these times there is a deliberate withdrawal on Cindy's part (her eyes take on a glassy appearance or she closes them completely and she resorts to one of the mentioned behaviors). It can be speculated that if Cindy had had a Head Start experience much of the initial distrust and suspicion of the new classroom environment might have been broken down and the enormous energy she devotes to coping with her fears and suspicions might have been redirected into more constructive learning experiences.

In the classroom activities in which Cindy does participate she does so with an air of reservation and reluctance which prevents her from entering into them wholeheartedly (as contrasted with Robin's early enthusiasm for the classroom activities). This is particularly evident during rhythms. Although Cindy has quickly mastered the various steps (skipping, running, jigs, etc.) she has displayed little of the excitement customarily connected with them (i.e. clapping as other children participate, tapping one's feet, smiling and laughing while engaging in the activity). Typically Cindy does the rhythm correctly but gazes fixedly at the floor with an expressionless stare on her face. This reserved involvement extends to other activities also. She often blandly recites the words to songs or verses in unison or carries out a specific instruction from the teacher (such as giving out papers) slowly and mechanically. Unfortunately, Cindy's general approach to these more teacher-directed activities has undergone little change during the entire observation period. Although she steadily increases in mastery of the materials and tasks within the kindergarten she still fails to convey a sense of pride in accomplishment or anything that could be interpreted as enthusiasm.

It is not until February that she displays even the slightest eagerness in an assignment. The specific instance is notable. At this time the teacher is having them make valentine men. Cindy approaches this activity with a smiling, eager face (as she responds to the cut valentines on the table). She works on the task (pasting valentines on the body to make arms and legs, etc) and when it is completed takes it to the teacher for approval. On her own initiative she points out to the teacher several items which she has left out and eagerly accepts the teacher's suggestions that she make a second one. This sequence reveals several new behaviors which are just beginning to appear. She now smiles while engaging in an activity and on several occasions appears to be talking to herself (or talking things over with herself); she approaches the teacher for approval less hesitantly; she offers constructive criticism of her own work and finally, she volunteers to be a participant in a structured activity. Prior to February and only infrequently thereafter were behaviors such as these in evidence.

Another notable aspect of Cindy's behavior is the infrequency with which she verbalizes. In most of the observations spontaneous verbalizations (and even answers to direct questions from the teacher) are completely absent. There are probably many reasons for Cindy's unwillingness to talk. She has a slight speech difficulty which is apparent when she does speak and about which she appears self-conscious. Her words are completely detectable, however, and in an environment where practice was encouraged the difficulty might be easily be corrected. One other reason may be related to her high level of anxiousness related to classroom participation. An example occurs in February when she was asked to select five children to do a rhythm with her. On the first trial she had only selected four.

The teacher immediately corrected her (not harshly) and made her count again. Now she appeared so anxious that she missed again. By the third attempt she could barely get the words out and tears swelled in her eyes.

Another possibility may relate to her infrequent contacts early in the semester with her peers. At the beginning of the year Cindy like Antoinette spends a good deal of time watching other children in various behaviors but made no effort to communicate with them (again cutting down on language practice). Unlike Antoinette, however, the children soon begin to make friendly overtures to Cindy. At first they exclude her from games (ie pass the ball or partner games) or tease her by taking objects away from her but they soon begin allowing for this 'silent' member of their group. By November she joins in group play with other children (although silently) and soon selects several friends with whom she sits regularly within the group. By December the interactions are frequent and while occurring predominantly during free play periods often center around objects or materials of mutual interest (puzzles, crayons, etc). By February Cindy has established herself among her peers and has several special girl friends (she shows no concern for the boys) who become almost constant companions through out the morning. She now is seen frequently looking around the group before deciding where to sit, or taking hands with several children before sitting down. Likewise, the girls often save her a seat or verbally remind others not to forget Cindy. As Cindy's confidence and position with her peers has improved Cindy has become the initiator of negative as well as positive behavior. She engages more frequently in teasing behavior such as throwing paper on children's heads, hitting and running away and untying other children's belts. However, the children for the most part ignore this

behavior. She has begun by this time to use the children as sources for checking and verifying perceptions and other information through brief conversations, such as "I have green" or "Is that big or little?" Her relationships and conversations never go beyond this, however.

Unfortunately, Cindy's relationship with her teacher has not progressed in such a positive manner. Much of Cindy's reluctance and nervousness about classroom participation are now focused (by January and February) increasingly upon the teacher. She has not learned to use the teacher as a source of information by engaging her in conversation nor does she look to her for praise of her performances. Cindy has continued to mechanically carry out the teacher's directions and has missed completely the excitement of a warm interactional relationship. In this aspect alone the worthwhileness of a close association with an interested adult offered during the Head Start program would have been of immense value.

In spite of the obvious impediments Cindy's total performance has gradually progressed and a stifled but quiet enthusiasm has appeared in her approach to class activities. It was apparent from the beginning that although Cindy was suspicious of her surrounding she caught on quickly to many of the demands placed upon her (in contrast to Antoinette who did not understand at all). For example, she quickly grasped the teacher's instructions in group games and other activities. On one occasion in October the teacher gave directions for the "Squirrel in the Tree" game. Cindy was one of the few to get the idea to move quickly to the closest tree to keep from being caught (other children ran randomly around the circle without looking intentionally for an opening). Since this teacher chose to introduce new activities each month (for example, puzzles were not brought out until December) it was possible to see how quickly she mastered each one. In the case of puzzles within a four week period she had gone

through the preliminary manipulatory and trial and error phases to complete proficiency in all of the puzzles. As her proficiency increased her enthusiasm (although subtly expressed) became more apparent. For example, she would often run to the puzzle holder so as to get a particular puzzle; she would often race with the other children to finish first and on one occasion exclaimed, "I beat you, I beat you, I did". Her mastery in other areas has also been evident. She has learned by rote to count and to recognize letters of the alphabet and as might be expected rarely makes a mistake. Cindy by March is confident enough of her knowledge of the alphabet to volunteer answers on several occasions (again quite mechanically).

Cindy's major free play activity and the one in which she is most relaxed has been looking at books. In the early months she would frequently entertain herself by leafing through the books, looking for two pictures that were alike, or humming to herself as she turned the pages. On one occasion she looked at the cover of a book that showed a bunny and then found the pages in the book exactly like it. This type of activity seemed to please Cindy and she spent some time looking from one to another. Cindy has continued her enthusiasm for books and spends some portion of time looking at them during each observation period. She also mastered the motor activities connected with bouncing the balls and on her own initiative experimented using one or two hands when the teacher introduced this. This latter activity became one of Cindy's favorites and as late as March she would bounce the balls a few times before choosing another play activity.

At the beginning of the semester Cindy's art work quickly progresses from unrelated lines and scribbles to clear representation of human figures. For example, contrast the drawing made in October with that made of a farmer in late November.

(October drawing) Cindy takes a sheet of paper from a pile and goes to a table and opens her crayons. She takes a red crayon and draws a circle in the middle of the paper. She now makes several short lines at the bottom of the sheet also in red. She now takes an orange crayon and scribbles on the edge of the paper. She now takes a brown crayon and makes a long line on one side of the paper (as if starting a border). She spends some time considering what color to use next as she looks back and forth from box to picture several times. Finally she takes orange again. She now takes the red crayon and fills in the circle in round circular movements. She now makes a red straight line across the page.

(November drawing) She first makes a green circle in the center of the page. She now adds a triangular-shaped body which she outlines with orange. She makes two yellow eyes, a green nose, a blue mouth and red stick arms and legs. She now fills in the body carefully in yellow staying within the lines. She adds a blue frame around her picture.

Although Cindy does not as yet use appropriate colors for her drawings the figure itself is clearly presented and all the essential bodily features are present. This drawing can easily be compared to Anita's former which displayed greater drawing skill as well as a more complex idea. Cindy has not arrived at the point of illustrating complex ideas or stories in her drawings and yet the progress in these early months is evident. It is interesting that Cindy often listens carefully to other children's conversations about their drawings and usually goes back to add details to her own on the basis of their conversations. For example, in the above case she heard two children discussing the need for eyebrows in their pictures, so Cindy immediately looked at her picture and added them in the appropriate place. Technically, also, Cindy has made quick advances. She went from a stage of scribbling, with short and uneven strokes to careful contemplation with long even and directed strokes. She began to carefully consider the crayons available to her and considered each of the lines she drew. Through-

out the middle months of the semester and even as late as March there are few additional improvements in Cindy's art work. She initates the examples and ideas for pictures given by the teacher minimally and her figures remain much the same as they were in November. She never seeks to illustrate ideas of her own creation on paper.

Cindy progresses in the first three months in each of the activities mentioned and she masters the materials at hand. However, her primary mechanism of discovery and of relating to the school environment has been through objects such as books, ball, etc. As she looks at books, for example, we see her making spontaneous grouping (matching) behaviors through visual perception of similarities. As the semester progresses Cindy begins to relie more and more on these familiar objects and materials and shows little will to explore new aspects of these materials or any others in the surroundings. This great hesitation to try something new and reliance on the familiar as a copying device prevents much adventure or thrill of discovery. What Cindy lacks is an inner curiosity or will to explore the new aspects of her surroundings. If the teacher instructs her to make a farmer she does so accurately and is content to stop there. She does not see the teacher as a conveyor of suggestions which can be ellaborated upon or discarded but rather as an authority whose dictates must automatically and mechanically be followed. Most of Cindy's energy is devoted to rigid performance of the teacher's instructions. This leaves little time for spontaneity or enthusiasm in her behavior. At the same time she makes little or no use of verbal exchanges with her peers or other adults to enhnace her experiences. In summary, she has remained largely object-oriented throughout the school observation period and until her speech problem and fears centering around adult-child interaction can be overcome the range of her experience will grow increasingly narrow.

Anita - Head Start
Birthdate: 11-20-60

Anita is a Head Start child within a classroom made up primarily of MH children. Whereas Robin probably represents a more typical picture of the MH child Anita would lie well above the average on a continuum. We might therefore consider her an "ideal" example of what can and should be happening during this sixth year of growth. Anita is a bright-eyed, friendly child who is always cleanly dressed and has her hair neatly braided. Her clothes are ironed and fresh looking and although she does not wear a great variety of clothes they appear newer and better kept than many of the other children in the room. She frequently wears new clothing to school which she eagerly tells about. Anita's neat physical appearance almost immediately distinguishes her from many of the others in the classroom. One also becomes aware of her because she is a frequent participant in class discussions, often helping other children who do not know the answers. At these times she speaks out clearly with self-assurance and a lack of embarrassment frequently absent in the other children. Also, from the earliest point in the year it was Anita who was selected for such tasks as assisting the teacher in the bulletin board displays, or taking attendance to the office. She was one of the children selected to represent the kindergarten in the school play at Christmas. She was sent to discuss her experiences in the Head Start program with representatives of the local board of education. When one observer greeted her one day with "Hello, how are you?" Anita responded confidently, "Just fine. And how are you?"

Anita's performance was well ahead of many of the children within the classroom from the beginning of the school year. She was quite at home within the classroom setting and spent little time merely adjusting

to the physical location or the many objects within the setting. In October she displayed the ability to verbalize about the items around her ("this is a turtle", "there are rocks") and almost immediately went beyond mere naming to constructive use of the materials to express more elaborate ideas. Whereas many of the children use the materials in the simplest manner Anita used them to express ideas which are much more complex (this is especially brought out in her drawings). It should also be pointed out that Anita's use of the materials themselves is also more refined than most children. A description of Anita's behavior at the easle provides an insight into her performance level: (November)

> She takes the red brush and fills in a pink circle she has made. She uses slow, short and careful strokes. She stays in the lines. She now stops to shoo away a fly that lands on her picture. She goes back to filling in with red. She now seats herself in a chair and looks carefully at her picture. She blows on her paint to dry it. Another little girl comes over and says, "where's the little girl, where's her eyes?" Anita says "I made them". She now takes green and makes two little eyes, a nose and a mouth. She puts on eyebrows. She now takes a yellow paint and makes a neck on the head. She now makes a square body and adds a triangular skirt. She calls out "Hi, Diane" to a friend who is passing by. She takes dark blue and fills in the body of the outline she has drawn. She stops, puts her brushes down and looks closely at her picture again. She now takes black and makes two parallel lines for arms. She then takes white and fills in between the parallel black lines making sure the two do not run together. She adds two legs. She says, "Hi, Deborah" to another child. She now makes a blue square form hanging from one arm (it looks like a purse). After filling in all the space on her drawing she takes her picture to the shelf to dry.

This shows Anita's greater skills with her materials (paints) than Antoinette for example. Anita's understanding of the use of color is also more refined. In November for example Anita looked at something

gray and called it light blue; she looked at a little girl's dress and called it beige. When the teacher inquired "what is beige?", Anita responded "like something faded". What is occurring then is that as the tools are used (crayon, chalk, puzzles, pictures, etc) the fuller potentialities of these tools are being investigated and take on additional meanings.

Whereas many of the children use their materials in simple investigatory behavior Anita uses them to express ideas which are more complex. The drawing of the pig is an example. On this occasion the teacher had been discussing the farm. However, on this day she had not mentioned any of the animals by name but merely read them a story about the Fluffy Duck and asked them to draw any of the farm animals she had read about. Anita after some discussion with another child decided to make a pig (as did the other child). The incident illustrated several points:

> The children are seated at the table and one little boy says, "I'm going to make a man". Anita says "you don't see no man in the Funny Duckling". Anita now proceeds with her pig. She makes a circle for the head and colors it in brown with red features. The body is in good proportion and gives the idea of being fat. She makes four legs and a flat nose in front. The whole drawing is in profile. She adds a base line and makes several flowers of orange and yellow with green stems. One boy says, "a pig is suppose to be yellow". "Can it be purple?" Anita answers, "no". "They can be brown or .... This is brown" (as she points to her drawing).

Anita by December consistently begins to choose realistic colors for her drawing. The proportionality of her drawings has been steadily improving and the use of profile suggests an advancement in technical skill from the more elementary front face drawings.

Anita's pictures because they are among the best in the room are frequently displayed and praised by the teacher. This reinforcement of behavior occurs infrequently for many of the other children and may be a factor in the greater output of work on Anita's part. Somewhat related to the higher quality of Anita's work is also an increase in output. During almost every observation period Anita could be seen in some art project. (not to the exclusion of other activities, however) The teacher frequently gives her special projects like making farm animals for puppets, drawing a policeman for the bulletin board project, making a pig, a reindeer, a witch, and a lion for a circus parade display.

The ideas that Anita expresses in her drawings illustrates that she approaches a problem with more contemplation and careful planning and that her ideas are more complex and categorical than most children at this stage. On one occasion in early October the teacher was discussing signs of fall with the children. The teacher mentioned the color of fall leaves, what happens to the corn and apples, etc. The instructions given were simply to draw a fall picture. Anita's picture consisted of a man with a wide brimmed hat, a horse and some yellow stalks. (other details included the key and background). When the teacher asked Anita to explain her picture she gave the following story: "Man and horse is helping him. He is a farmer. The farmer's name is Farmer Brown". Anita apparently related an incident which was meaningful to her (either from direct experience or a story) to the discussion of fall which the teacher had presented. This is certainly sequentially beyond a simple presentation of a single idea; or the imitation of the teacher's drawing. Anita is relating two ideas; one given by the teacher and one drawn from her own past experience. Early in the semester these types of connections are beginning to appear in Anita's

drawing and verbal responses. Many of Anita's verbalizations reveal a simple linking of related events in a manner similar to that in her pictures. A stimulus in the immediate environment calls up a name or incident which she sees as related. Examples of such connections are frequent because Anita participates regularly in class discussions:

(1) During Show and Tell she tells this story: "I was playing with my cousin and we were running in a circle. And I fell down and my legs "fell off".

(2) A child has brought in a rubber Indian (doing a war dance) for Show and Tell. The teacher asks what the Indian is doing. Anita says, "dancing". She stops and thinks for a minute and then says, "he's Indian dancing".

(3) In December the teacher is discussing the difference between mittens and gloves. She asks those children who have brought mittens to go get them. As the children are waiting for their return Anita looks around the room and says "like the snowmen has on" (as she points to a large snowman with mittens).

Anita's ideas and verbalizations for the most part are related directly to the demands of the situation in which she finds herself, i.e. art assignments. Yet she is able to relate the present situation to some previous experience. She seems able to set up a simple goal or idea (determined by the immediate situation) and keep this in mind long enough to relate it to a past experience.

Throughout the year some of the 'connections' which she makes are incorrect but because of her willingness to participate and attempt answers (much like Robin's eagerness early in the semester, and something absent to

a great extent in the MHE sample) the teacher has an opportunity to correct her misinterpretations). For example, on one occasion Anita looked at a picture of a man with a football and said "this is a man playing baseball". The teacher took the opportunity to explain the difference between the two games to her and the rest of the class. On another occasion one child was discussing his German Shepherd puppy. Anita responded, "I have a friend who has a German Shepherd poodle. He is real curly". The teacher again stepped in to clarify the situation. Although Anita was obviously quite confused about the whole thing she seemed to be trying to make a distinction in her own mind.

Throughout the fall and winter there is a steady increase in the behaviors point out thus far. There are, however, several refinements occuring by the month of January and steadily increasing thereafter. Anita now begins to notice more often incongruities in relationships which are illogical for some reason or other. For example, on one occasion she noticed that her scissors had been placed in a crayon box holder. She laughed and said "who put my scissors in here". On another occasion she was playing with paper dolls and took the baby shoes belong on one of the dolls. She realized that they were too small for her and said to the other child as she held up the shoes to her feet "I can't get my baby shoes on". The child laughed. Anita then ran to the teacher and said the same thing. The teacher also laughed and Anita tried the joke on several more children until they were all laughing. Another quality which comes out more obviously as the year goes on is Anita's development of problem-solving like behavior. On one occasion the teacher had asked the class to cut out colored shapes. They were to cut out a triangle, circle, rectangle

and square and paste them on a piece of paper. One child pointed out that Anita had forgotten to paste on a square. She says "I'm trying to figure it out. I'll do it" and she does. She has steadily increased in her attempts to figure things out for herself without supervision. Along with this during recitation times especially in February and March there has been an increase in attempts to correct her own mistakes. Many children wait for the teacher to give them an answer or correction or do not seem to care. For example, on one occasion she misidentified letter R for letter B. Before the teacher could offer a correction Anita said, "No that is wrong. I mean R."

Likewise we should mention that in the more formal training of the second half of the year Anita has done quite well in learning the alphabet, memorizing the words to songs, and the other formal kindergarten curriculum. She continues to participate willingly and follows the classroom routines with no difficulty.

What are Anita's relationships with the other children? Again the range of Anita's activities varies. Although occasionally she engaged in more familiar and isolated activities, such as imitative play alone in the doll corner, more complicated interactions began occurring immediately. She began in October to move within a circle of girl friends and one little boy who seemed to function at about her same level. She quickly became an arbitrator in the classroom problems, and displayed a sense of fairness in her judgments. For example, on one occasion both children wanted the same jar of paint. Anita stated firmly, "Deborah can use it first, and then you can use it". The decision seemed to appease everyone. She will often correct other children's mistakes and they will remind her if she is wrong. For example, one little boy looked at his picture and said,

"I'm finished". Anita promptly reminded him that he had not filled in all the white spots and pointed them out. He went back and finished his work. Very early in the year Anita became the center of a nucleus of girls. She varies consistently between these girls as to who is her favorite but they all seem to like her. She seems from the earliest point, however, to have one or two which she sits next to, or lends things to, etc. (the child varies from week to week). She is quite aware of the performance in most activities such as art, rhythms, etc. of these girls and frequently checks her own work against theirs. It is this group that begins early in the year to seek the teacher's approval in most of their activities and to take the lead in complying with the teacher's demands. By January the children begin to look upon Anita as the one to go to for help. She is always asked by some child to give help if they do not know the answer to a question (the teacher has encouraged asking another child for help in these instances). They invite her to join their games, read books, play ball or whatever activity they may be engaging in. She is the first one selected for partners in a game or to sit next to in a row. One brief incident describes her general popularity:

> Pierre comes over to the book corner where Anita is sitting. He makes another little girl get up so he can sit next to her. They look at a book together for several seconds. Anita's attention is then directed to the center of the room and she momentarily gets up and goes out to see what is happening. Pierre comes up and takes her hand and leads her back to sit down again. She does so and they continue looking at the book.

As the semester goes on much more time is spent in arranging such details as who can sit next to her. She is frequently overheard telling one child to move so that another can sit next to her. The children always do exactly as she directs in these seating situations.

Anita's relationship with the teacher has been increasingly positive. The teacher looks upon Anita as a star pupil and Anita closely identifies with the teacher in much of her behavior. The teacher gradually increases the responsibilities she gives to Anita and has often worked with her in special sessions on alphabet learning long before the rest of the class was ready.

Anita's behavior is illustrative of a high-performing, easily adaptable child. From the beginning of the schoollyear she was expressing complex catigorization behavior both in her drawings and verbally. These categorization attempts although frequently incorrect show Anita's persistence in attempting to understand and cope with her world of objects and events. Her methods of accomplishing this have become more refined (self-criticism, recognition of incongruities) but the basic process continues within the framework and routines of the classroom. She is not stifled in her attempts to represent ideas or relate objects by lack of understanding of the teacher's assignments. Rather she is able to carry out the tasks and ellaborate on them with methods of her own creation. She gains the approval of the teacher by steady improvement in the work she produces and can often vary the routines set up by the teacher to attempt creative procedures of her own choosing. This allows her a freedom of expression which is not open to Robin who must maintain teacher approval by staying within the framework of the defined procedures.

Antoinette - Non Head Start
Birthdate: 1-19-60

Antoinette is a thin, small-boned child, who may best be described as lanky. She walks with a one-sided gait always extending one foot without appropriate change of movement in her upper torso. Her hair is closely shaven with small curls which from a distance gives an appearance of baldness. Presently she wears blue rimmed glasses which are frequently left at home. Her school attire is usually one of three or four wrinkled, faded too short dresses with long knee socks which in no way match the dresses. Buttons are frequently missing or mismatched, and shoes are scuffed, gray from dirt and often untied. One of the most notable characteristics in Antoinette's physical appearance is the infrequency with which she smiles. (It was March before she responded with a smile of recognition at the observer). Her usual facial expression is a rather mask-like stare which remains the same regardless of the activity. In general and this will be brought out more clearly as the report goes along, Antoinette is a non-verbal child which makes it particularly difficult to observe accurately her reactions to persons and objects within this classroom situation. One can do no more than assume a difference between her mask-like staring where few active processes may be going on and the more active looking and listening behavior which may be going on within. This creates a particular problem since a major part of Antoinette's time during the fall and winter months has been spent in looking at, listening to and imiating the behavior of other children. Also during this early period Antoinette seems to be carrying on a very basic investigation of her surroundings. It is not uncommon for her to interrupt her activities to run over to look at the air conditioner, or the piano or the toys on the shelf. Within a matter of ten minutes on one occasion I saw her run several times to the air conditioner, look in, put her ear up to it and run back to resume her activity.

Throughout the observations during the fall and early winter months "watching" dominates A's behavior regardless of the activity. During free play she often interrupts her own activity to watch another little girl braid a doll's hair, call out the name of crayons in their boxes, count the numbers in the linoleum in the center of the floor, read books, work puzzles or build with blocks. It is notable that at this time A makes no attempt to engage in the activities which she is observing. Antoinette is especially watchful of other children during the milk period both before and after receiving her own milk. (Upon inquiring I discovered that the teacher will often give a second milk to the children finishing first. I have never seen Antoinette attempting to hurry to be the first one done, however).

In addition to this watching behavior Antionette spends considerable time listening to and imitating those around her. For example, if the teacher is having the children name colors A would consistently repeat the name only after the other children in the group have said it. The fact that she says the word implies that she has been listening to the conversation (perhaps without understanding, however) and then imitates the other children in what is said. Antionette seems to be guarding against being wrong in her answer, and consequently is incorrect only when the rest of the class is. It is also doubtful that Antionette has any real understanding of some of the conversations taking place and prefers anonymity to stupidity. Another example of Antoinette's imitative behavior occurs during rhythms. She consistently will begin to hop or skip after the other children have begun. She will look not just at one child but moves her head quickly around the circle to get the consensus of the group as to the correct rhythm. Again, if they are wrong she is wrong and in the early months of the years she showed little or no awareness of being wrong, unless it was pointed out by the teacher. After Antoinette had

begun a rhythm she typically wears this mask-like expression mentioned above and frequently continues her skipping, or hopping long after the music and the rest of the group have stopped.

An example of the rather primitive level of Antoinette's classroom behavior occurs in early November when she is allowed to go to the easle for the first time. The exact sequence occurs as follows:

> The teacher tells A to get an apron and she does so. She now goes to the easle and immediately takes a brush with which she makes a small red circle and a big one. She now scriboles on the paper with red. She now stops and watches as other children draw with crayons. She plays with the blue paint brush but does not paint with it. After a long period she makes a blue circle on the paper and more scribbles. She puts her finger in the blue paint. She looks again at the other children drawing at the tables with crayons. She now stops and watches the teacher correct a little boy cleaning brushes at the sink. She now makes a heavy runny blue circle around the outside of the picture. The blue soon drips off the page onto the easle. She now makes one blue circle inside the other circle. She makes more scriobles in blue. She now stops and asks the teacher if she can go to the bathroom. She returns and watches the man cleaning windows. She now looks over at a container on the sink which has paints she has been told not to use. She stirs her brush in the blue paint again and now looks around the easle to see the painting on the other side.

Antoinette's performance at the easle consists primarily of scribbles and unrelated lines. She spends her time investigating the paints themselves rather than using them to represent any particular ideas. It appears that this is her first encounter with paints. Her investigating of the paints is continually interrupted by the need to check on other events going on sumultaneously within the room (many of which are also new to her).

During these early months of the school year Antoinette's most spontaneous and frequent behavior occurred in the doll corner. Here in October we

find her mixing food in a pan on the stove, putting dishes on the table, and eating and drinking the food she has prepared. At clean-up time she has no trouble and seems to enjoy tucking in the dolls, clearing the table, and placing the dishes in their appropriate cupboards. It is during these clean-up times that Antoinette's behavior is most adaptive to the kindergarten program and in which she displays her only independent behavior. She has quickly picked up the routines of clean-up whether it be in the doll corner or at milk time. If she forgets something or see something undone she will frequently remove herself from the new activity to go correct it (for example, if a chair is not pushed under a table).

Antoinette for the most part is getting her cues for performance from the other children and yet her relationship with them also seems to follow a pattern of watching and investigating. Most of the interactions are non-verbal and center around objects rather than the people themselves. Let us go back to the doll corner to illustrate the point. A typical encounter is the following:

> Antoinette looks into the cupboard and another child immediately pushes her away. As she gets up to look again the child tells her to sit down. Antoinette now grabs the pot she wanted away from the little girl and places it on the table in front of her. Another child now says to Antoinette that the pot does not belong to her and helps the first little girl pull it away from her. Antoinette makes no verbal response during this whole episode and retires from the debate to another part of the doll corner.

Antoinette has not yet arrived at a point of personal cooperative interaction with the other children. In this case, she thinks merely of what she wants to play with (the pot) and makes no attempt to negotiate for it on a personal level. Rather she sees her peers simply as physical obstacles (objects) which presently block her goal. When she does not succeed in this most direct

method she gives up and withdraws to new attractions.

By November Antionette's verbal contact with the other children are still minimal except for an occasional statement to a nearby child. These statements indicate a first attempt on Antoinette's part to engage in behaviors centered around another person. For example, she was over heard asking one little girl if she wanted to see something and then showed her a book which she had been looking at. Most of these interactions are not of a directly personal nature, however, and are centered primarily an object (such as the book) of mutual interest. At about the same time, however, several children in the class began taking a rather solicitious attitude toward Antionette. They often come over and tie her shoes, or open her milk carton or even draw her pictures for her. Antionette, however, shows very little reaction to any particular children and continues to seat herself alone during milk time (although others may join her later) and in the group she never seeks out any particular chum to sit next to. Other children have become increasingly abusive to Antionette. For example, on one occasion A left the table momentarily to go to the bathroom. When she returned another child had taken her chair and they would not permit her back at the table. On two occasions children took her free play drawings and scribbled freely on them. On each of these occasions A just quietly waited and withdrew from the situation to a new activity. In December when one child had taken her paper and was making red marks on it Antoinette verbalized her first protestations (saying "stop that") but they proved weak and ineffective. December follows much the same pattern with regard to social interaction except that there begins to be increasing (but not frequent) exchanges of a practical nature including request to borrow crayons, books, etc.

Antoinette's relationship with the teacher may be surmised is also minimal at best. Again we see a great deal of watching and investigating behavior. She will often stop her activity to watch the T as she moves around the room talking with various children. This is expecially true when the teacher is discipling another child. A is infrequently called upon to answer questions which may be due to the fact that she infrequently volunteers or if called upon may reamin completely silent. When the teacher asks questions of the whole group A follows the lead of the children around her and responds in unison. The only observable contacts are those in which A follows the directions of the teacher and A responds with the appropriate behavior (i.e. "get an apron for paint"). Since Antionette is always in the right place in enough time I have seen her disciplined by the teacher. It is not until early December that she goes to the teacher seeking approval for any of her work, and then does so infrequently.

By the month of December there are some indications of change in A's behavior. Although the looking, watching and imitating behavior persists persists A now begins to place herself in the role of active participant and investigator more frequently. The looking behavior is now often followed by actual participation in the activity itself. On one occasion early in the month she had spent several minutes watching other children drawing on the blackboard. Before long A approached the board, looked at the chalk and made several exploratory scribbles of her own. In some cases the participation in the activity may not follow the "watching" of the behavior in time but may be separated by several activity periods. It was interesting to see A observing several children as they looked and talked about a particular book. At the time A did not rush over to join them. However, almost an hour later when the children were given some time to play A went immediately to the bookshelf, took the same book and leafed through the pages (although the book itself was upside down and

the pages turned backwards). Not only has Antoinette become a more active participant nonverbally she now begins making her first contributions to the discussion periods conducted by the teacher. On the first occasion when I observed this the teacher had been discussing Christmas trees. She had suggested to the children that perhaps they should like to draw one or something else appropriate for the season. Spontaneously, Antoinette seemed to make an important connection and she commented, "My mommy has put up her Christmas tree". It seem appropriate that this first comment should relate to a happening at school with some recent and important happening in her home. Having talked about Christmas trees Antoinette followed through on the idea and attempted to make one during the art period that followed. This was the first indication of a transfer of meaning from one activity to the next revolving around a very concrete object (a Christmas tree). The picture of the tree which Antoinette made likewise was an improvement over the scribbles and intersecting lines which she previously had been making. Although the proportion was poor Antoinette managed to produce some clear cut angles to form the branches of her tree. She also used an appropriate color (green) and added a few additional colors (red and yellow) to make circular ornaments.

By January after the vacation period Antoinette increasingly exhibits behaviors which were just appearing in December. She now actively investigates more of the games and objects in the room although she still does not engage in any verbalizations about the objects themselves. Although she still spends some time in the doll area she now prefers other objects such as the peg boards or puzzles. On one occasion upon entering the room she made a quick inspection of every shelf on the two walls before deciding which object to concentrate on for the free play period. This behavior wasy'intentional' and she finally chose the peg board and occupied herself with it. (and successfully

completed it). As she begins inspecting the books, working the puzzles and looking at the bulletin boards she begins occasionally to verbalize about specific objects and occurrences. She makes concrete and isolated statements about objects such as, "I have two red" when she finds two pieces of red crayon in her box. She frequently may attempt to count certain objects such as crayons although she has not learned to match the number with a particular quantity.

Almost as a continuation of the behavior that began with the Christmas tree in December by January and February there has been a gradual but real improvement in Antoinette's drawings. She now makes clearly distinguished circles and lines and uses a variety of shapes and forms in her own designs. She still needs a good deal of supervision, however in art assignments made by the teacher and obviously has little understanding in most instances of what the teacher wants. On one occasion, for example, the teacher had them drawing mittens. The teacher had simply told them about the differences between the two and had not illustrated (not that an illustration would have helped, i.e. see Robin's art behavior) so Antoinette merely relied on copying another child who was also wrong. They both traced around the fingers of one making glove-like drawings. Naturally, Antoinette did not get the even more complicated idea of making pairs so she ended up with one glove rather than two mittens. The lesson had no meaning for her.

By February and March, Antoinette seems to be comfortable within the classroom setting. She is familiar with the routines, can anticipate the demands of the teacher as far as procedural sequences, and shows some mild enthusiasm for some activities (although her level of performance is still low). For example, she enjoys that portion of the morning devoted to rhythm activities but still cannot do simple skipping. By late February she volunteered (for the first time) to show a plastic wrist watch which she had brought to

school. Still her only comment was, "I brought a wrist watch to show" and the teacher did not take the opportunity to ellaborate on the subject. She now raises her hand during more academic sessions to identify letters for the teacher and appears to know the first few letters correctly. Antoinette frequently counts the members of the class for the teacher but in late January was still confusing three and four and probably does not have a clear understanding of quantity as represented by these items.

During this same period Antoinette's relationships with her peers has again taken a step forward. There are now frequent verbal interactions of a more personal nature including efforts on her part to aid and assist other children, in tying their bows or shoe laces. Still infrequent but occasional group discussions about specific objects do occur in which Antoinette is a contributing member. One example occured when several children sat at a table on which there was some play money. Each child, including Antoinette felt the money and looked closely at it and then commented. One said "it's real", etc. and Antoinette said "no, it's not real" and this was the general concensus. This type of group stimulation and contribution so evident in Anita's efforts at categorization behavior are just beginning to appear in Antoinette's repetoire. With regard to the teacher, Antoinette continues to use the mechanism of avoidance for the most part. She follows the procedural routines closely and attempts to remain obscure by being in the right place at the right time and being as quiet as possible. Unfortunately she succeeds and therefore cannot use the teacher as a sounding board in categorization begavior as does Anita.

In summary, it can be seen that Antoinette is far behind the other children in all areas of development. A major portion of the first semester

was spent in acquainting herself with the environment. Her art activities, puzzle skills, rhythm skills, etc. have been slow to develop consequently. Now that Antoinette has become more comfortable within the classroom situation there has been a steady improvement in her skills, greater and more constructive social interaction with peers, and an appearance of occasional enthusiasm for various activities.